

LINEAR DECIBEL-SCALE VARIABLE GAIN AMPLIFIER

Abstract

A linear decibel-scale variable gain amplifier includes an amplifying stage for generating an output voltage according to a differential input voltage, and a gain-controlling stage for outputting a gain-controlling voltage to the amplifying stage according to a first controlling voltage and a second controlling voltage. A voltage gain of the linear decibel-scale variable gain amplifier is inversely proportional to a simple exponential function, and the value of the simple exponential function is determined by the difference between the first controlling voltage and the second controlling voltage. The value of the voltage gain is unaffected by changes of the thermal voltage.